



IFW

Docket No.: 2224-0257PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Shuso IYOSHI et al.

Application No.: 10/575,620

Confirmation No.: @@@

Filed: April 13, 2006

Art Unit: N/A

For: PROCESS FOR PRODUCING
POLYURETHANE FOAM

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

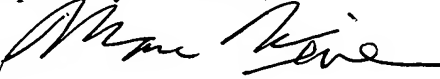
Sir:

Attached is a copy of the translation of Written Opinion of the International Searching Authority with Notification. Please make this of record in the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

Dated: OCT 8 2006

Respectfully submitted,

By 

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Attachment(s)

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MSW/sh

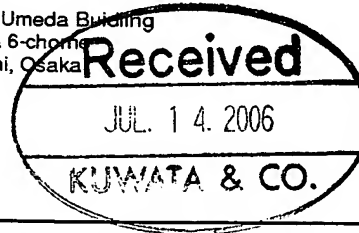
From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

KUWATA, Mitsuo
KUWATA & CO.,
6th Floor, Minato Umeda Building
3-17, Nishitemma 6-chome
Kita-ku, Osaka-shi, Osaka
530-0047
JAPON



Date of mailing (day/month/year) 06 July 2006 (06.07.2006)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference FDA-296PCT FP-05021PC	
International application No. PCT/JP2004/015649	International filing date (day/month/year) 15 October 2004 (15.10.2004)
Applicant DAICEL CHEMICAL INDUSTRIES, LTD. et al	

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yoshiko Kuwahara
Facsimile No. +41 22 338 82 70	Facsimile No. +41 22 338 82 70

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FDA-296PCT	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2004/015649	International filing date (<i>day/month/year</i>) 15 October 2004 (15.10.2004)	Priority date (<i>day/month/year</i>) 17 October 2003 (17.10.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant DAICEL CHEMICAL INDUSTRIES, LTD.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet.																								
	In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																							
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<input type="checkbox"/>	Box No. VII	Certain defects in the international application																							
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Date of issuance of this report 26 June 2006 (26.06.2006)</td> </tr> <tr> <td style="padding: 5px;">Authorized officer Yoshiko Kuwahara e-mail: pt07@wipo.int</td> </tr> </table>	Date of issuance of this report 26 June 2006 (26.06.2006)	Authorized officer Yoshiko Kuwahara e-mail: pt07@wipo.int
Date of issuance of this report 26 June 2006 (26.06.2006)			
Authorized officer Yoshiko Kuwahara e-mail: pt07@wipo.int			

PATENT COOPERATION TREATY

TRANSLATION

PCT

From the
INTERNATIONAL SEARCHING AUTHORITY

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **01.02.2005**

Applicant's or agent's file reference

FDA-296PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/015649

International filing date (day/month/year)

15.10.2004

Priority date (day/month/year)

17.10.2003

International Patent Classification (IPC) or both national classification and IPC

C08G18/42

Applicant

DAICEL CHEMICAL INDUSTRIES, LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015649

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/015649

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-3	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-3	NO
Industrial applicability (IA)	Claims	1-3	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: JP 2003-292560 A (Daicel Chemical Industries, Ltd.), 15 October 2003</p> <p>Document 2: Robson F. STOREY, Kent R. HERRING and Douglas C. HOFFMAN, "Hydroxy-Terminated Poly(ε-Caprolactone-co-δ-valerolactone) Oligomers: Synthesis, Characterization, and Polyurethane Network Formation," Journal of Polymer Science, Part A: Polymer Chemistry, Vol. 29, No. 12, July 1991, pages 1759 to 1777</p> <p>(1) Claim 1</p> <p>Document 1 discloses a method for the production of polyurethane foam by reacting an organic polyisocyanate component with a polyol component in the presence of a catalyst while using water as a foaming agent, wherein the polyol component has an average hydroxyl value of 100 to 600 mg KOH/g and comprises 5 to 40% by weight of a polyester polyol; therein, document 1 further indicates that said polyester polyol, which also has an average hydroxyl value of 100 to 600 mg KOH/g, was obtained by using an initiator that was configured from a low molecular weight organic compound with at least three</p>			

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015649

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

active hydrogen groups in order to subject a lactone compound to a ring opening polymerization reaction. In addition, document 1 also indicates that said polyester polyol is liquid at room temperature, presents caprolactones and valerolactones as examples of said lactone compound, and indicates that it is preferable for the polyester polyol that is obtained from said lactone compound to have a low viscosity.

However, document 1 does not disclose a feature wherein the polyester polyol is a lactone polyol that was obtained by subjecting a ϵ -caprolactone and a δ -valerolactone to a ring opening copolymerization reaction.

On the other hand, document 2 indicates that lactone copolyols that are obtained by subjecting a ϵ -caprolactone and a δ -valerolactone to a ring opening copolymerization reaction have a low melting point relative to lactone homopolymers that are obtained by subjecting either a ϵ -caprolactone or a δ -valerolactone to a ring opening copolymerization reaction, and it is obvious that a decrease in the melting point of the product will be accompanied by a decrease in the viscosity of said product. As a result, it would have been easy for a person skilled in the art to conceive of subjecting a ϵ -caprolactone and a δ -valerolactone to a ring opening copolymerization reaction in the method for the production of polyurethane foam that is disclosed in document 1 in order to obtain a polylactone polyol that has an even lower viscosity. Furthermore, a person skilled in the art could have adjusted the molar ratio of the ϵ -caprolactone and the δ -valerolactone with consideration of the viscosity of the resulting polyol,

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015649

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

as appropriate. In addition, the effects that result therefrom could have been predicted by a person skilled in the art.

Such being the case, the invention set forth in claim 1 is novel; however, the invention in question does not involve an inventive step in the light of the disclosures in documents 1 and 2.

(2) Claim 2

Document 1 presents glycerines, trimethylol propanes, triethanol amines and pentaerythritols as examples of initiators for the polylactone polyols.

Such being the case, the invention set forth in claim 2 is novel; however, the invention in question does not involve an inventive step in the light of the disclosures in documents 1 and 2 for reasons similar to those presented in section (1).

(3) Claim 3

Document 1 indicates that polylactone polyols have a viscosity of 2000 mPa/s or less at a temperature of 25°C.

Such being the case, the invention set forth in claim 3 is novel; however, the invention in question does not involve an inventive step in the light of the disclosures in documents 1 and 2 for reasons similar to those presented in section (1).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015649

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The disclosure "a low molecular weight compound with at least two active hydrogen groups" in claim 1 does not clearly delimit the specific range of molecular weights included within the scope of said disclosure.